

Listing of Claims:

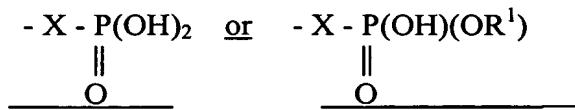
This listing of claims will replace all prior versions, and listings, of claims in the application:

1-23. Cancelled

24 (currently amended). A radiation-sensitive element comprising

- (a) a substrate with at least one hydrophilic surface and
- (b) a radiation-sensitive coating on at least one hydrophilic surface of the substrate, wherein the coating comprises:
 - (i) at least one free-radical polymerizable monomer, oligomer, polymer or mixture thereof with at least one ethylenically unsaturated group each,
 - (ii) at least one photoinitiator or sensitizer, which is capable of absorbing radiation of a wavelength in the range of 250 to 1,200 nm,
 - (iii) at least one stabilizer compound comprising at least one group capable of inhibiting free-radical polymerization, and at least one other group capable of sorption at the hydrophilic surface of the substrate, and
 - (iv) optionally at least one additive comprising coinitiators which form free radicals after the excitation of the photoinitiator or sensitizer with radiation of a wavelength of 250 to 1,200 nm, binders, dyes, plasticizers, chain transfer agents, leuco dyes, inorganic fillers, surfactants or polymerization inhibitors not suitable for sorption at the surface of the substrate,

wherein the at least one group of the stabilizer compound capable of sorption at the surface of the substrate is:



wherein R¹ is C₁-C₁₈ alkyl, C₇-C₁₁ aralkyl or C₆-C₁₀ aryl and X represents a single bond, -O-, -NH- or -N(C₁-C₁₀ alkyl)-.

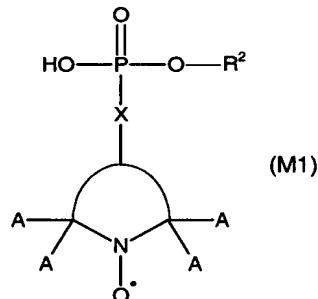
25 (cancelled)

26 (previously presented). The radiation-sensitive element according to claim 24, wherein the at least one stabilizer compound inhibiting free-radical polymerization is derived from stable radicals, mono-, di- or trihydroxy aromatics, quinones, nitroso compounds or mixtures thereof.

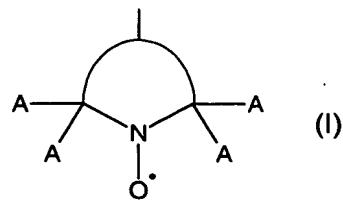
27 (previously presented). The radiation-sensitive element according to claim 24, wherein the stabilizer compound is a monomeric compound.

28 (previously presented). The radiation-sensitive element according to claim 24, wherein the stabilizer compound is a polymeric compound.

29 (currently amended). The radiation-sensitive element according to claim 27 29, wherein the monomeric stabilizer compound is represented by formula M1:

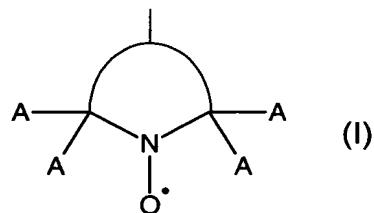


wherein X represents a single bond, -O-, -NH- or -N(C₁-C₁₀ alkyl)-,
R² is hydrogen, C₁-C₁₈ alkyl, C₇-C₁₁ aralkyl, C₆-C₁₀ aryl or a fragment

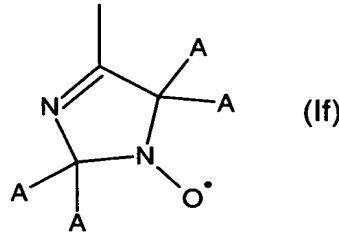
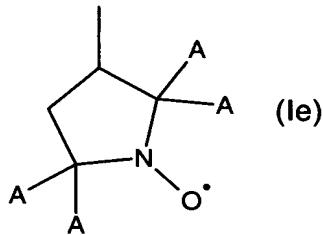
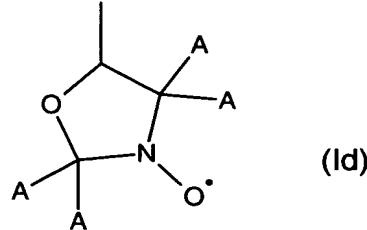
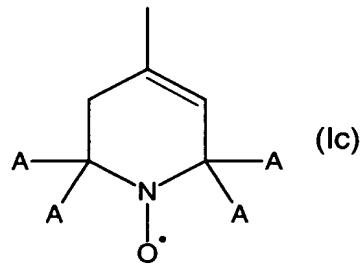
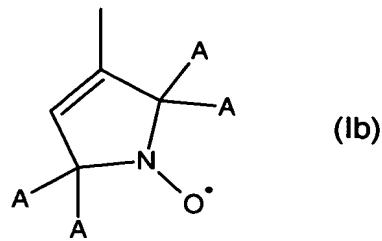
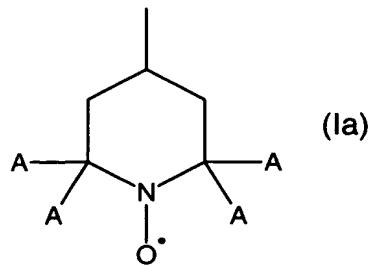


wherein each A is independently optionally substituted C₁-C₁₀ alkyl and the nitroxyl function is part of a 5- or 6-membered heterocyclic ring, which optionally comprises one or more double bonds and optionally contains, in addition to the nitrogen atom of the nitroxyl group, one or more O, S or N heteroatoms.

30 (previously presented). The radiation-sensitive element according to claim 29, wherein the fragment



is represented by formulas Ia – If



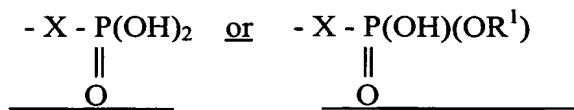
31 (previously presented). The radiation-sensitive element according to claim 29, wherein X represents -O-.

32 (previously presented). The radiation-sensitive element according to claim 29, wherein R² is a hydrogen atom.

33 (previously presented). The radiation-sensitive element according to claim 29, wherein A is methyl.

34 (currently amended). The radiation-sensitive element according to claim 28, wherein the polymeric stabilizer compound is a copolymer comprising in polymerized form:

(a) at least one copolymerizable monomer substituted with at least one sorption group that is



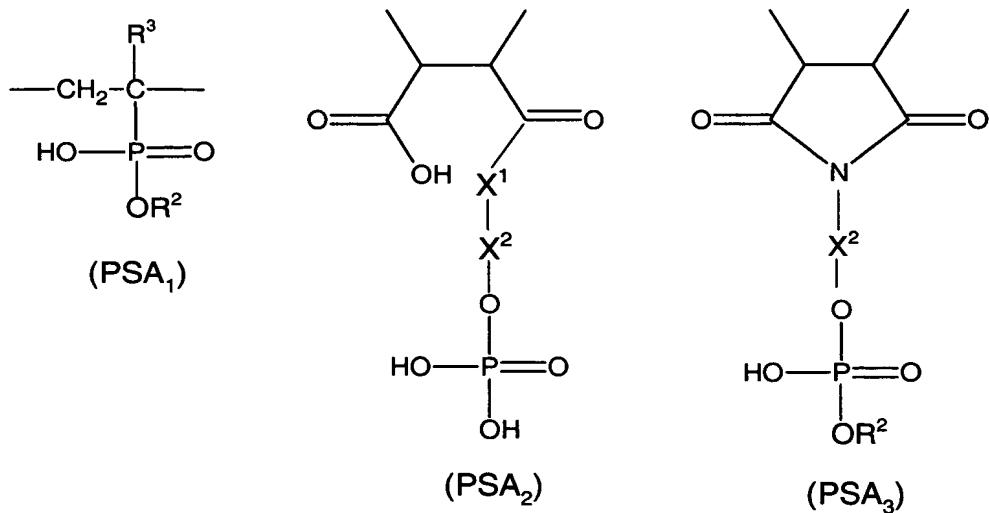
wherein R¹ is C₁-C₁₈ alkyl, C₇-C₁₁ aralkyl or C₆-C₁₀ aryl and X represents a single bond, -O-, -NH- or -N(C₁-C₁₀ alkyl)-, and

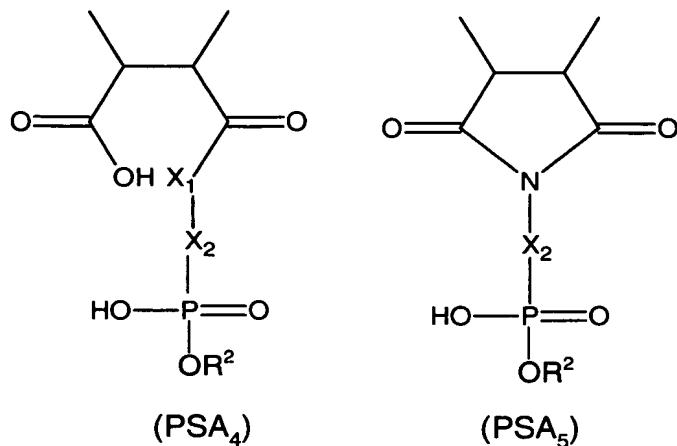
~~fumaric acid, maleic acid anhydride, ethylene, propylene, acrylic acid ester, methacrylic acid ester, vinyl ester, vinyl alcohol or styrene;~~

(b) ~~at least one copolymerizable monomer substituted with at least one sorption group; and~~

↳ at least one polymerizable monomer substituted with at least one inhibitor group.

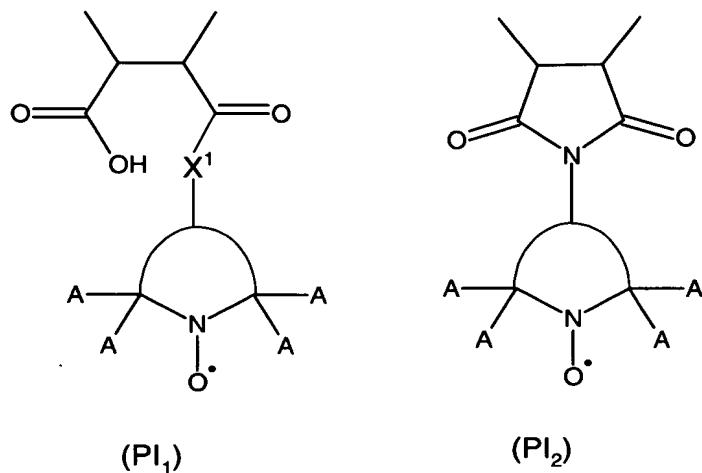
35 (currently amended). The radiation-sensitive element according to claim 34 28, wherein the polymeric stabilizer compound comprises at least one structural unit represented by formulas PSA₁ – PSA₅.

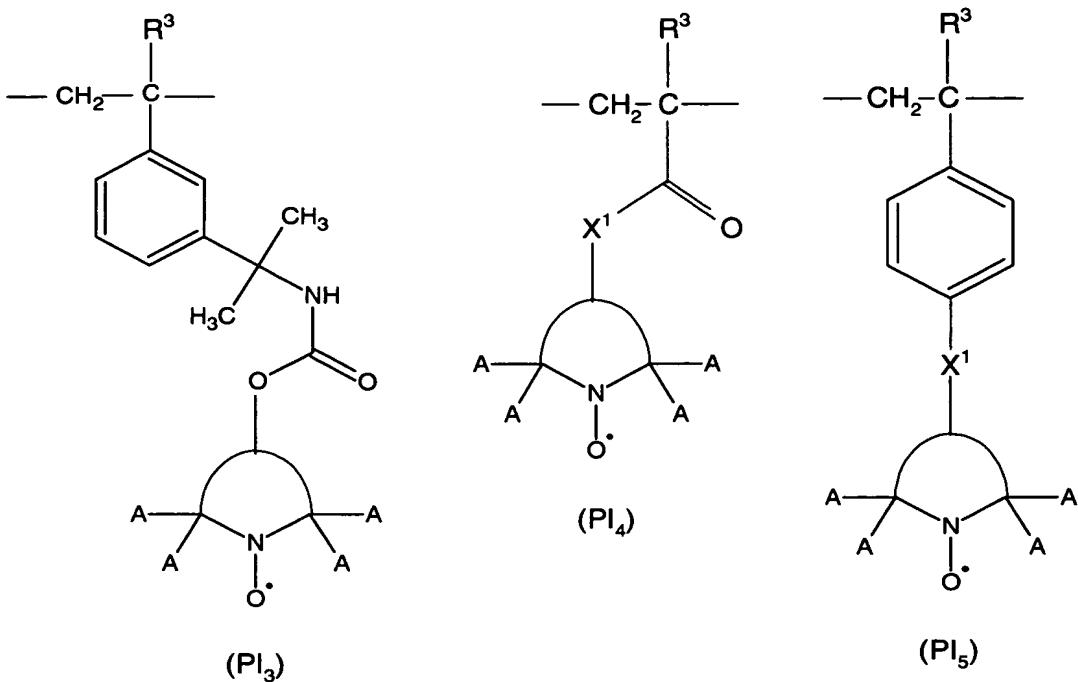




wherein X² is C₁-C₁₂ alkanediyl or C₆-C₁₀ arylene, R³ is C₁-C₁₂ alkyl, X¹ is -O-, -NH- or -N(C₁-C₁₀ alkyl) and R² is a hydrogen atom, C₁-C₁₈ alkyl, C₇-C₁₁ aralkyl or C₆-C₁₀ aryl.

36 (previously presented). The radiation-sensitive element according to claim 28, wherein the polymeric stabilizer compound comprises at least one structural unit capable of inhibiting free-radical polymerization represented by formulas PI₁ – PI₅:





wherein A is optionally substituted C₁-C₁₀ alkyl , X¹ is -O-, -NH- or -N(C₁-C₁₀ alkyl), R³ is C₁-C₁₂ alkyl and the nitroxyl function is part of a 5- or 6-membered heterocyclic ring, which optionally comprises one or more double bonds and optionally contains, in addition to the nitrogen atom of the nitroxyl group, one or more O, S, or N heteroatoms.

37 (previously presented). The radiation-sensitive element according to claim 24, wherein at least 80 wt.-% of the stabilizer compound (iii) are sorbed at the hydrophilic surface of the substrate.

38 (previously presented). The radiation-sensitive element according to claim 24, wherein the substrate is an aluminum foil or plate having a hydrophilic surface on at least one side.

39 (currently amended). ~~The radiation-sensitive element according to claim 24,A~~
radiation-sensitive element comprising

- (a) a substrate with at least one hydrophilic surface and
- (b) a radiation-sensitive coating on at least one hydrophilic surface of the substrate, wherein the coating comprises:
 - (i) at least one free-radical polymerizable monomer, oligomer, polymer or mixture thereof with at least one ethylenically unsaturated group each,
 - (ii) at least one photoinitiator or sensitizer, which is capable of absorbing radiation of a wavelength in the range of 250 to 1,200 nm,
 - (iii) at least one stabilizer compound comprising at least one group capable of inhibiting free-radical polymerization, and at least one other group capable of sorption at the hydrophilic surface of the substrate, and
 - (iv) optionally at least one additive comprising coinitiators which form free radicals after the excitation of the photoinitiator or sensitizer with radiation of a wavelength of 250 to 1,200 nm, binders, dyes, plasticizers, chain transfer agents, leuco dyes, inorganic fillers, surfactants or polymerization inhibitors not suitable for sorption at the surface of the substrate,

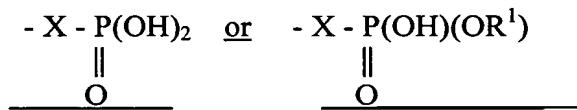
wherein the element further comprises an oxygen-impermeable overcoat.

40 (currently amended). A process for the production of a radiation-sensitive element comprising the steps of:

- (a) providing an optionally pretreated substrate having a hydrophilic surface;
- (b) applying to said optionally pretreated substrate having a hydrophilic surface, a radiation-sensitive mixture comprising

- (i) at least one free-radical polymerizable monomer, oligomer, polymer or mixture thereof with at least one ethylenically unsaturated group each,
- (ii) at least one photoinitiator or sensitizer, which is capable of absorbing radiation of a wavelength in the range of 250 to 1,200 nm,
- (iii) at least one stabilizer compound comprising at least one group capable of sorption at the hydrophilic surface of the substrate, and at least one other group capable of inhibiting free-radical polymerization,

wherein the at least one group of the stabilizer compound capable of sorption at the surface of the substrate is:



wherein R¹ is C₁-C₁₈ alkyl, C₇-C₁₁ aralkyl or C₆-C₁₀ aryl and X represents a single bond, -O-, -NH- or -N(C₁-C₁₀ alkyl)-.

- (iv) a solvent or solvent mixture, and
- (v) optionally at least one additive comprising coinitiators which form free radicals after the excitation of the photoinitiator or sensitizer with radiation of a wavelength of 250 to 1,200 nm, binders, dyes, plasticizers, chain transfer agents, leuco dyes, inorganic fillers, surfactants or polymerization inhibitors not suitable for sorption at the surface of the substrate;

and

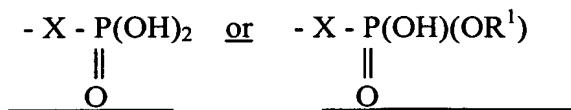
- c) drying the layer obtained in step (b).

41 (currently amended). A process for the production of a radiation-sensitive element comprising the steps of:

- (a) providing an optionally pretreated substrate having a hydrophilic surface;
- (b) applying to said optionally pretreated substrate having a hydrophilic surface, a mixture that is not radiation-sensitive comprising at least one solvent and at least one stabilizer compound comprising at least one

group capable of sorption at the substrate and at least one group capable of inhibiting free-radical polymerization;

wherein the at least one group of the stabilizer compound capable of sorption at the surface of the substrate is:



wherein R¹ is C₁-C₁₈ alkyl, C₇-C₁₁ aralkyl or C₆-C₁₀ aryl and X represents a single bond, -O-, -NH- or -N(C₁-C₁₀ alkyl)-,

- (c) drying the layer obtained in step (b);
- (d) applying a radiation-sensitive mixture comprising
 - (i) at least one free-radical polymerizable monomer, oligomer, polymer or mixture thereof with at least one ethylenically unsaturated group,
 - (ii) at least one photoinitiator or sensitizer, which is capable of absorbing radiation of a wavelength in the range of 250 to 1,200 nm,
 - (iii) a solvent or solvent mixture, and
 - (iv) optionally at least one additive comprising coinitiators which form free radicals after the excitation of the photoinitiator or sensitizer with radiation of a wavelength of 250 to 1,200 nm, binders, dyes, plasticizers, chain transfer agents, leuco dyes, inorganic fillers, surfactants or polymerization inhibitors not suitable for sorption at the surface of the substrate;
- and
- (e) drying the layer obtained in step (d).

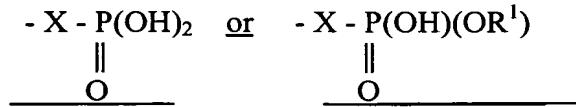
42 (currently amended). The process according to claim 40, wherein the process further comprises the step of applying an oxygen-impermeable overcoat to the layer dried in step (c).

43 (currently amended). The process according to claim 41, wherein the process further comprises the step of applying an oxygen-impermeable overcoat to the layer dried in step (e).

44 (currently amended). Lithographic printing form produced by a process comprising the steps of:

- (a) providing a radiation-sensitive element comprising:
 - (1) a substrate with at least one hydrophilic surface and
 - (2) a radiation-sensitive coating on at least one hydrophilic surface of the substrate, wherein the coating comprises:
 - (i) at least one free-radical polymerizable monomer, oligomer, polymer or mixture thereof with at least one ethylenically unsaturated group each,
 - (ii) at least one photoinitiator or sensitizer, which is capable of absorbing radiation of a wavelength in the range of 250 to 1,200 nm,
 - (iii) at least one stabilizer compound comprising at least one group capable of inhibiting free-radical polymerization, and at least one other group capable of sorption at the hydrophilic surface of the substrate,

wherein the at least one group of the stabilizer compound capable of sorption at the surface of the substrate is:



wherein R¹ is C₁-C₁₈ alkyl, C₇-C₁₁ aralkyl or C₆-C₁₀ aryl and X represents a single bond, -O-, -NH- or -N(C₁-C₁₀ alkyl)-, and

- (iv) optionally at least one additive comprising coinitiators which form free radicals after the excitation of the photoinitiator or sensitizer with radiation of a wavelength of 250 to 1,200 nm, binders, dyes, plasticizers, chain transfer

agents, leuco dyes, inorganic fillers, surfactants or polymerization inhibitors not suitable for sorption at the surface of the substrate.

- (b) image-wise exposure of the element with radiation of a wavelength adjusted to the absorber contained in the radiation-sensitive coating;
- (c) optionally heating the irradiated element;
- (d) removing the unexposed areas of the coating with an aqueous alkaline developer; and
- (e) optionally heating the developed printing form or subjecting it to overall exposure or both.